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Two new xylariaceous species from Kenya

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Abstract — A survey of wood rotting ascomycetes in Kenya produced taxa in *Biscogniauxia* and *Kretzschmaria* that did not match descriptions of any known species and are hereby described as new species. The species of *Biscogniauxia* differs from known species by having small globose ascospores and a non-amyloid apical ring, while that of *Kretzschmaria* differs by having small non-stipitate stroma.

Key words —*Ascomycota*, *Xylariaceae*, taxonomy

Introduction

During a field study on wood degrading ascomycetes in Kenya, we encountered two interesting ascomycete fungi fitting characteristics of *Biscogniauxia* Kuntze and *Kretzschmaria* Fr. After careful examination, the collections did not match characteristics of any species described in the genera and are hereby described as new species.

The genus *Kretzschmaria* was recently revised by Rogers & Ju (1998) to also include some taxa previously placed under *Ustulina* Tul. & C. Tul. The stromata of *Kretzschmaria* are superficial ranging in shape from peltate, discoid, restricted pulvinate, to effused pulvinate. They are attached to the substrate by definite stipes or by narrow connectives and can either be gregarious, discrete, or fused into a crust. Mature stromata have a carbonaceous outer layer encasing a rather soft white to blackish inner layer. The stromata also lack KOH extractable

pigments. The asci are cylindrical and short stipitate with an amyloid apical ring. The ascospores are brown to dark brown and ellipsoid to fusoid with a straight or sigmoid germ slit on the convex side that is either spore length or less and exhibits perispore indehiscence in 10% KOH. *Biscogniauxia,* which was also recently revised by Ju et al. (1998), includes species that have erumpent, solitary, or confluent stromata, and are applanate, effused-pulvinate or raised discoid in shape. Mature stromata lack KOH extractable pigments. The asci are 8-spored, cylindrical, short stipitate, and persistent with an apical ring that is amyloid or rarely inamyloid. The ascospores are brown, unicellular, lack dehiscent perispores, and often have a cellular appendage. Their shapes range from ellipsoid to short fusoid, inequilateral to equilateral with narrowly to broadly rounded ends. The germ slits are spore length or less than spore length, straight or sigmoid, and the epispore is smooth or occasionally ornamented. Our collections fit the characteristics of their respective genera. For other taxa treated in the genera, see Rogers et al. (http://mycology.sinica.edu.tw/xylariaceae).

Taxonomy

Kretzschmaria parvistroma Mugambi, Huhndorf & J.D. Rogers, **sp. nov.** Figs. 1–7
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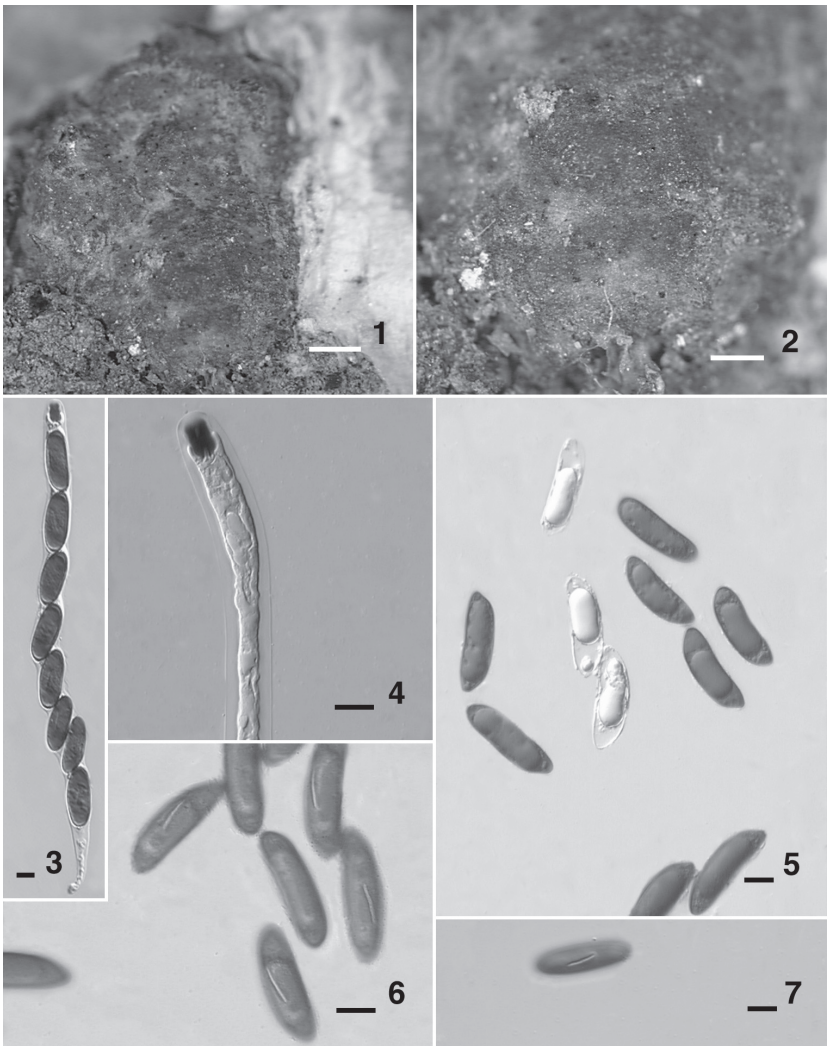
Stromata pulvinata, usque ad 7 mm longa × 4 mm lata × ca. 1 mm alta, late in substrato affixa, superficie fusca, intus nigra. Textura carbonacea. Perithecia globosa, usque ad 0.8 mm diam. Ostiola subtiliter papillata. Asci deliquescentes, annulo apicali in liquore iodata Melzeri cyanescente, urceolatis, ca. 9 µm alto, 5 µm crasso, plerumque colore in ascum extensum. Ascosporae brunneae, unicellulares, leves, sub ellipsoideae vel sub cylindrici vel plus minusve allantoidei, (34–)37–38(–39) × (10–)12–13 µm, rima germinativa brevissima, recta vel oblique praeditae. Paraphyses abundans. Anamorphosis ignotus.

Holotype: Kenya, Coast Province, Taita-Taveta District, Taita Hills, Ngangao forest reserve, S 3^0 22.301', E 38^0 20.446', 1800 m elev., Apr 2005, on woody branch 1 cm diameter, G.K. Mugambi 188N (**Holotype** EA).

Etymology: Refers to the size of the stroma, bearing small stroma

Stromata pulvinate, up to 7 mm long × 4 mm diam × ca. 1 mm high, with broad attachment to substrate, surface dark brown, interior blackish, carbonaceous. Perithecia globose, up to 0.8 mm diam., ostioles finely papillate. Paraphyses abundant, extending beyond asci, cylindric, branched, septate, 2–4 µm wide. Asci fragmentary, cylindric, short stipitate, 218–295 × 11–15 µm, with urn-shaped, amyloid apical ring, ca. 9 µm high, 5 µm broad, with bluing usually extending into ascus below ring. Ascospores brown, smooth, unicellular, subellipsoid, subcylindrical or more or less allantoid, (34–)37–38(–39) × (10–)12–13 µm, with germination slit short, mainly occupying central part of spore, 8–10 µm long, straight to oblique. Anamorph unknown.



Figs. 1–7. *Kretzschmaria parvistroma*. 1–2. Stroma on substratum. 3–4. Asci. 5–7. Ascospores. Bars: 1–2 = 1 mm; 3–7 = 10 µm.

Habitat and distribution: On decorticated wood and known only from Kenya.

Comments: *Kretzschmaria parvistroma* differs from the species currently accepted in the genus by its unusually small stromata for a non stipitate *Kretzschmaria*. The ascospore shape and ascus ring shape resemble those

of *K. cetrarioides* (Welw. & Curr.) Sacc. that has been reported from several parts of Africa (see Rogers & Ju 1998). However, our species differs by having sessile stromata as opposed to the stipitate ones reported for *K. cetrarioides*. *Kretzschmaria lucidula* (Mont.) Dennis possesses ascospores that slightly overlap in size with *K. parvistroma* but differs by having stromata that are attached to the substrate by narrow connectives and with fine vertical striations on the sides. *Kretzschmaria pavimentosa* (Ces.) P.M.D. Martin, first described from Asia but later reported widely in tropical and temperate regions, shares some similarities in asci and ascospore morphology with our species. However, it differs markedly by stromata usually densely aggregated and attached to the substrate by narrow connectives thus appearing as though stipitate (see Rogers & Ju 1998). Unfortunately, we were unable to obtain cultures from our collection.

Biscogniauxia kenyana Mugambi, Huhndorf & J.D. Rogers, **sp. nov.** Figs. 8–14

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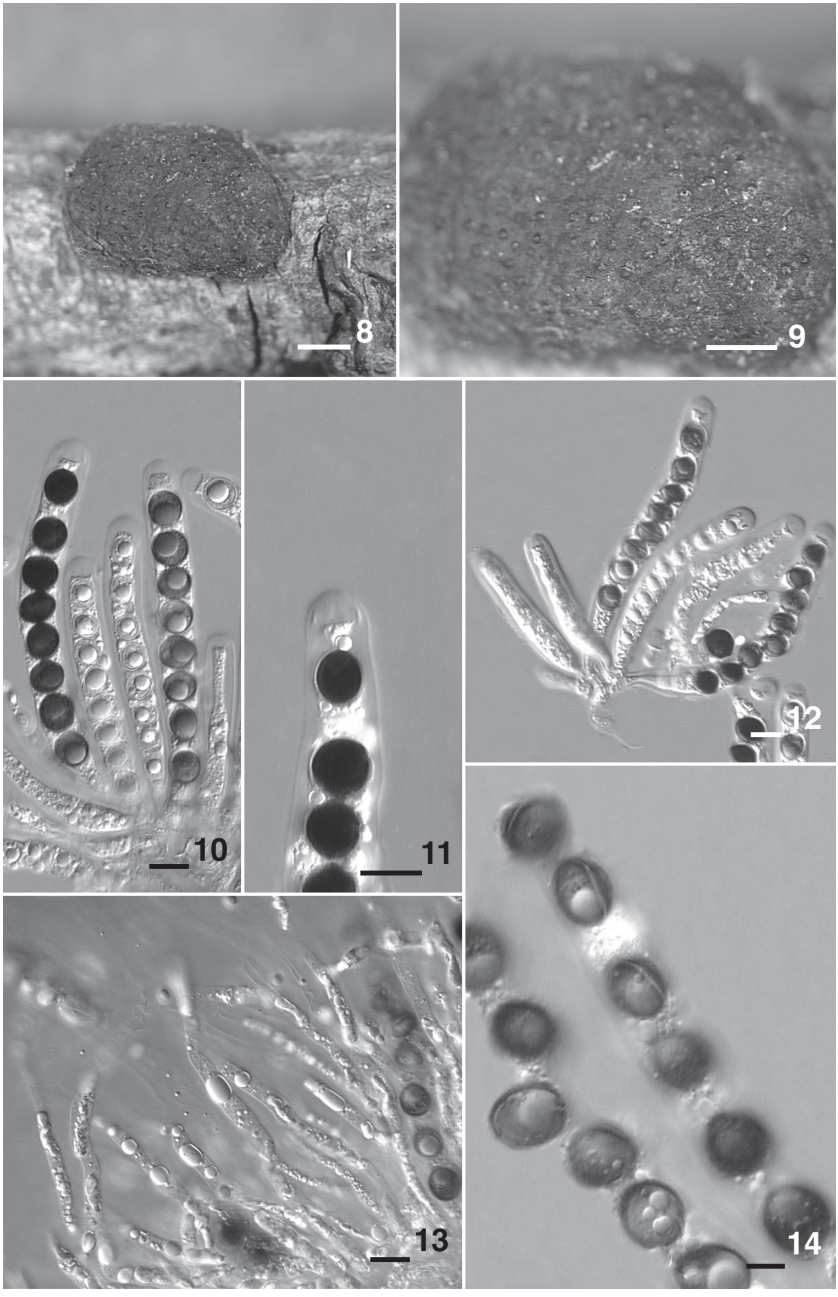
Stromata pulvinata, 2–4 mm longa × 2–3 mm lata × 1–1.5 mm crassa, superficies matura sub fusca; textura sub superficie et inter perithecia plus minusve carbonacea; textura sub peritheciis inconspicua. Perithecia plus minusve globosa, ca. 0.5 mm diam. Ostiola subtiliter papillata inconspicua. Asci cum 1 usque ad 8 ascosporis praediti, brevistipitati, ca. 110 µm longitudine tota × ca. 10 µm crassi, annulo apicali in liquore iodata Melzeri non cyanescente. Ascosporae fuscae, unicellulares, leves, sub globosa, 10–12 × 7–9(–9.5) µm aut globosa, 8 µm usque ad 10 µm, rima germinativa recta interdum pro parte majore cingenti praeditae. Paraphyses inclusae. Anamorphosis ignotus.

Holotype: Kenya, Coast Province, Malindi District, Arabuko-Sokoke National Park, S 3^0 19.277', E 39^0 55.422', 42 m elev., May 2005, on woody branch 3 cm diameter, G.K. Mugambi 247A (**Holotype** EA).

Etymology: Refers to the type locality.

Stromata pulvinate, 2–4 mm long × 2–3 mm broad × 1–1.5 mm high, with brown surface, tissue beneath surface and between perithecia more or less carbonaceous, tissue beneath perithecia highly reduced. Perithecia more or less globose, ca. 0.5 mm diam. Ostioles finely papillate slightly raised from stromatal surface, appearing slightly darker than the stromatal surface. Paraphyses abundant, extending beyond asci, cylindric, tappering towards the tip, branched, regularly septate, 3–4 µm broad. Asci short-stipitate, 97–112 × 9–12 µm, with apical ring inamyloid, with 1 to 8 ascospores. Ascospores brown to dark brown, hyaline when young, unicellular, smooth, subglobose, 10–12 × 7–9(–9.5) µm, to globose, 8–10 µm diam., with germination slit straight, sometimes surrounding major part of spore. Anamorph unknown.

Figs. 8–14. *Biscogniauxia kenyana*. 8–9. Stroma on substratum. 10–12. Asci. 13. Paraphyses. 14. Ascospores. Bars: 8 = 1 mm; 9 = 1 mm; 10–14 = 10 µm.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Habitat and distribution: On decorticated wood and known only from Kenya.

Comments: *Biscogniauxia kenyana* resembles *B. schweinitzii* Y.M. Ju & J.D. Rogers (Ju & Rogers 1998), the only other known *Biscogniauxia* species with subglobose ascospores. This species differs from *B. kenyana* in having ascospores that are distinctly flattened or laterally compressed. In *B. schweinitzii* the stromatal surface is less curved and more distinctly flat than in *B. kenyana* and the ostioles are lower than the stromatal surface. An amyloid ascus ring is present in *B. schweinitzii* and absent in *B. kenyana*. Another species described from Africa, *B. africana* Y.M. Ju & J.D. Rogers, differs from *B. kenyana* in having stromata that are raised discoid with a plane surface and conspicuously raised margins and in having ascospores that are equilateral ellipsoid, not subglobose. An apparent diagnostic characteristic of *B. kenyana* is the variable numbers of mature ascospores in the asci. Most asci appear initially to have eight ascospores, but in many cases, fewer than eight attain the brown color of maturity and appear to disintegrate.

Acknowledgments

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